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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/853,448	05/10/2001	Richard A. Holl	18925-16	6301

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EXAMINER
GURZO, PAUL M

ART UNIT	PAPER NUMBER
2881	

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/853,448	HOLL, RICHARD A.	
	Examiner	Art Unit	
	Paul Gurzo	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 May 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8,10-14,16-29,31-34 and 36-41* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8,10-14,16-29,31-34 and 36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 May 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

P.G.

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *6* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 5, 7, 8, 10, 13, 18, 21-23, 25, 27-29, 33, and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bischof et al. (5,300,019).

Bischof et al. teach an apparatus, method and means for processing materials by passing materials in a flow path through an annular processing passage between two closely spaced surfaces (22 and 24) provided by respective inner (25) and outer (23) cylindrical apparatus members with one rotating relative to the other irradiating the materials with processing energy through a wall of one of the two members (col. 2, line 1 - col. 3, line 4, col. 4, lines 45-61, and Fig. 1-5). It is obvious that the appropriate materials are used so that they are essentially free of Taylor vortices. They do not explicitly state that the processing energy passes through "at least one window in a wall of the two members." However, the definition of a window is merely "a transparent panel" as stated by Webster's Collegiate Dictionary, Tenth Edition. 019 teaches that the outer wall is essentially transparent to radiation within a prescribed wavelength (col. 2, lines 9-10). Therefore, it is the position of the Examiner that prior art's teaching of a transparent wall teaches on the claimed use of a window. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a "window" because this will allow for the radiation to pass into the interior region to eradicate the contaminants.

They teach that the radiation is within a prescribed wavelength range and they teach the claimed rotation and, while not stated, it is obvious to the design that the radial spacing is constant as shown in Fig. 4 (col. 2, lines 7-40).

They also teach the claimed vertical orientation in Fig. 2, as well as having the processing energy passing through at least one window in the wall of the outer member (col. 2, lines 60-66). They teach that this apparatus is used for eradicating fluids such as blood, which is opaque, and the prescribed wavelength taught above teaches on the use of light irradiation. They also teach the production of eddies (col. 2, lines 33-40) and the use of gold or like highly reflective material for reflecting the wavelengths of radiation (col. 7, lines 13-15 and col. 8, lines 13-21).

Claims 6, 14, 26, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bischof et al. (5,300,019), and further in view of Holl (5,538,191).

Regarding claims 6 and 26, the above-applied prior art is silent to the use of a horizontally oriented parallel axes, but Holl teaches that the rotational axis can be vertical or horizontal (col. 3, line 50). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus taught by Bischof et al. to include horizontal orientation because this orientation can provide a more efficient operation or easier handling.

Regarding claims 14 and 34, Holl teaches the use of a transducer (col. 6, lines 2-7).

Claims 4, 11, 12, 16, 17, 19, 20, 24, 31, 32, 36, 37, 39, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bischof et al. (5,300,019), in view of Holl (5,538,191), and further in view of applicant's admitted prior art.

The prior art does not explicitly specify the claimed use of electromagnetic energy, but the applicant states that it is well known in the art to process substances in the form of liquids, solids, or gases by applying energy in the form of heat, visible, ultraviolet, or infrared light as well as longitudinal pressure oscillations, microwave, X-ray or gamma irradiations (page 1, paragraph 0006). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use electromagnetic energy because it is known to be useful for increasing reaction rates or sterilizing substances.

Further, having the height of the annular processing passage less than the penetration depth of the electromagnetic energy is a matter of design choice and is inherent to Holl, who teaches an elongated chamber of thin rectangular cross section (col. 5, lines 7-17). This design will succeed in eliminating the claimed Taylor vortices that are taught by Bischof et al. (col. 5, lines 15-21). In addition, any modification, such as the linear velocity and energy frequency range is considered obvious to the above-applied art and is not given patentable weight.

Response to Arguments

Applicant's arguments filed May 15, 2003 have been fully considered but they are not persuasive. Applicant argues that the prior art does not teach passing the energy through at least one window in a wall of the two members, that the applicant's prior art cannot be combined, and that the claimed ranges are not inherent.

Regarding Applicant's argument that the prior art does not teach a window, the Examiner interprets a window to mean "a transparent panel" as stated by Webster's Collegiate Dictionary, Tenth Edition. 019 teaches that the outer wall is essentially transparent to radiation within a prescribed wavelength (col. 2, lines 9-10). Therefore, it is the position of the Examiner that prior

art's teaching of a transparent wall teaches on the claimed use of a window. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a "window" because this will allow for the radiation to pass into the interior region to eradicate the contaminants.

Regarding the argument that the combination of the prior art with Applicant's teaching is not proper, it is the position of the Examiner that since the use of the desired energy is so very well known in the art (see page 1, paragraph 006) that it is obvious that the system taught by Bischof et al. can operation with such. Though electromagnetic energy is not explicitly taught, it is an obvious extension of energies that are taught, namely heat, visible, ultraviolet, infrared, microwave, X-ray, and gamma.

Regarding the argument that the claimed values are ranges are not inherent, these rejections are now obvious ones through a 35 USC 103(a) rejection. Further, the range of 2.5 GHz to 50 GHz is merely the entire range of electromagnetic energy, so it is obvious that the energy will be between these values. Further, the relative linear velocity of at least 0.5 meters per second is considered obvious, and the specification lacks any teaching of the criticality of this value in comparison to any other value.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Gurzo whose telephone number is (703) 306-0532. The examiner can normally be reached on M-Thurs. 7:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on (703) 308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

PMG
August 5, 2003

JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800